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| 10/757,064 | 01/14/2004 | Naoki Katsuda | 125A 3525 | 1374 |

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QUINN EMANUEL
KODA & ANDROLIA
865 S. FIGUEROA STREET, 10TH FLOOR
LOS ANGELES, CA 90017

| EXAMINER | |
|---|---|
| SHAHRESTANI, NASIR | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/757,064 | KATSUDA ET AL. | |
| | Examiner | Art Unit | |
| | Nasir Shahrestani | 3737 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *09 March 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _____ is/are rejected.

7)☒ Claim(s) *1-33 and 35-44* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

Claims 1-44 are pending.

Claim 44 has been added as new.

Previous rejections of claims 1-43 have been withdrawn.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

**Claims 1-24, 28-33, 35-36, 41-44,** are rejected under 35 U.S.C. 102(b) as being anticipated by Jung et al. (U.S. Patent No.: 6,239,868) as being unpatentable over Jung et al. (U.S. Patent No.: 6,239,868) in view of Kimchy et al. (U.S. 2004/0054278 A1).

**Regarding claims 1-8, 19, 28, 36** Jung et al. teaches a diagnostic imaging apparatus (see title) comprising a hand-held body (fig. 1), a luminous means for irradiating infrared light (col. 9 lines 7-30), and an imaging means provided in the forward portion of the hand-held body (col. 8 lines 15-23); wherein said imaging means comprises a solid state image sensing device (sensor 122) and an optical means (fig. 2) for forming an optical image of a diagnostic object to output predetermined height, angle, and/or diagnostic information when light is irradiated (see abstract).

Jung et al. further teaches wherein a luminous means for irradiating white light is further provided (col. 2 lines 20-28), being that of optical path changing means (fiber optics 7) and wherein said forward portion comprises a removable or detachable tip (fig. 8A). Jung et al. further teaches a shielding hood (col. 6 lines 3-6) that may be used to prevent extraneous light from disturbing light detection. Jung et al. clearly teaches that said luminous means is contained within said attachment (removable tip 88); and wherein plural luminous means (wide and dual band receivers) are provided in a manner that a light receiving member (source fiber S) is disposed in the center (fig. 40).

**Regarding claims 9-12**, Jung et al. teaches wherein said optical means is a light receiving filter (filter 110) being adjacent to a light receiving part (receiving fiber optics 7) of said imaging means (fig. 11); and wherein luminous means comprise LED (col. 15 lines 4-30) constructed to switch or alter the wavelength of emitting light as is an inherent function of LED.

**Regarding claims 13-18, 20-23,** Jung et al. clearly teaches wherein said head portion of said detachable forward portion is provided with said luminous means (optic connectors 90) for transmitting specific wavelength of light (fig. 8A), and as mentioned above, a radiation filter (filter 110) allowing emissions of specific wavelengths to be transmitted to the sensor (122); and wherein said forward portion is capable of being separated into a head portion containing optical changing means (optic connectors 90) and a base portion including a solid state imaging device (sensor 122), and provided with a light receiving filter (filter 110); and wherein a separation function of the head and base portion is provide by a coupling means (optical guard 92) providing in such a way that luminous means (90) is interposed for said coupling means (fig. 8A).

**Regarding claim 24**, Jung et al. further teaches filter changing means selectively and switchably positioning at a predetermined position (fig. 1, element 4).

**Regarding claims 29-30,** Jung et al. teaches wherein said luminous means include plural light emitting members (red, green, blue) of different wavelengths with radiation driving means (fig. 9); and wherein time division control is used for driving radiation (col. 18 lines 22-46).

**Regarding claims 32-33**, Jung et al. further teaches an image storing means (microprocessor 10), and a control box or foot pedal (foot control 414) so as to record and store diagnostic image information; and teaches a light source selection switch (fig. 1 – SWITCH) provided in the main body, or foot pedal.

**Regarding claim 41**, Jung et al. further teaches wherein a power source (battery compartment 516) and transmitter are provided within said main body (cordless unit 500) to provide for cordless operation (figs. 35 and 36).

**Regarding claims 42-44**, Jung et al. teaches emitting light with wavelengths suitable for hardening photo-polymerization resin at over 430nm (curing light 302).

Jung et al. do not specifically teach a hand-held probe using infrared imaging.

Kimchy et al. teach a hand-held probe utilized to produce gamma rays, infrared, and ultraviolet light in order to produce image (par. 0028) and specifically infrared thermography (par. 0144).

It would have been obvious to one of ordinary skill in the art at the time of invention to have modified the apparatus and method as taught by Jung et al. and to have incorporated the teachings of Kimchy et al. in order to provide for accurate temperature sensing and concurrent mapping of thermo data.

**Claims 25-27, 37-40** are rejected under 35 U.S.C. 103(a) as being unpatentable over Jung et al. (U.S. Patent No.: 6,239,868) in view of Kimchy et al. (U.S. 2004/0054278 A1) and further in view of Melikechi et al. (U.S. Pub. No.: 2002/0187454).

**Regarding claim 25**, Jung et al. in view of Kimchy et al. teach all the limitations of claim 24 but does not teach wherein said filter unit comprises said plural kinds of light receiving filters being rotationally disposed around an axis which is parallel to/or normal to an optical axis direction of said imaging means or said luminous means. Melikechi et al. teaches the aforementioned limitation wherein a photo curing device is provided with an array of light emitting diodes (see title) and provides a flexible arm illustrating bending and rotation of the LED head assembly (fig. 2) and well as rotation about a central axis (fig. 1 element 16). It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the apparatus as taught by Jung et al. and to have included the bending and rotational head assembly mechanism as taught by Melikechi et al. so that the head fixture can rotate or bend to a temporarily fixed position providing for optimized viewing angles and more accessible viewing positions of the mouth.

**Regarding claims 26-27**, Jung et al. teaches wherein said switching means comprises a motor (738) capable of driving a rotation mechanism and further teaches said filter synchronously controlled with an irradiation signal of said luminous means (col. 26 lines 57-62).

**Regarding claim 37-40**, Jung et al. in view of Kimchy et al. teach all the limitations of claim 7 but does not teach wherein said light shielding hood is made of a soft elastic tubular member such as rubber or the like. Melikechi et al. an elastic, light blocking protective

membrane sheath covering the head of the hand-held device (element 14), which inherently reflects light as is the property of an elastic material. It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the apparatus as taught by Jung et al. and to have included the protective sheath as taught by Melikechi et al. to allow for easy mobility and maneuvering and replacement after a procedure is finished, as well as preventing extraneous light from entering an imaging area of interest.

### *Allowable Subject Matter*

**Claim 34** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art of record teaches all the limitations of claim 32, but fails to teach wherein said image storage means is provided with an automatic photography control means for executing a predetermined time sequence by manual operation of a photography switch each time irradiation light with a different wavelength is selectively irradiate.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nasir Shahrestani whose telephone number is 571-270-1031. The examiner can normally be reached on Mon.-Thurs: 7:30-5:00, 2nd Friday: 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NSS
10/1/2007

BRIAN L. CASLER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700